NOVEMBER/DECEMBER 2024

FMB11/CMB11 — FUNDAMENTALS OF MICROBIOLOGY

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define Endosymbiotic theory.

2. Describe S.A. Waksman's contributions to microbiology.

3. Examine the principle behind simple microscopy.

4. Which type of bacteria is identified by using acid fast staining?

5. Define binomial nomenclature.

6. Classify the types of algae.

7. List out the different types of bacterial flagella arrangements.

8. What is the function of cytoplasmic membrane in bacterial cells?

9. List out the two common resistance mechanisms in bacteria.

10. What is the difference between sterilization and disinfection?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain the theory of spontaneous generation.

Or

(b) Describe Robert Koch's Postulates.

12. (a) Explain the principle of phase contrast microscopy.

Or

(b) How do Gram-positive and Gram-negative bacteria differ?

13. (a) Explain about the significance of Bergey's Manual in bacterial classification.

Or

(b) Discuss about the three-kingdom classification.

14. (a) Distinguish between cilia and fimbriae in bacteria.

Or

(b) Summarize about endospore.

15. (a) Explain the mechanisms of antiviral agents with examples.

Or

(b) Discuss some antibacterial and antifungal agents with examples.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Elaborate note on the contributions of Anton Van Leewenhoek, Louis Pasteur and Alexander Fleming.

17. Explain in detail about the Electron Microscopy.

18. Illustrate in detail about the five kingdoms of classification.

19. Discuss in detail about the intracellular organelles and explain its role.

20. Explain in detail about the physical and chemical methods of sterilization.

———————